

1 **CLAIMS**

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3 1. Valve assembly for use with a dispensing
4 apparatus, the valve assembly comprising:
5 a valve;
6 a lever arranged to open the valve to dispense
7 product; and

8 variable spacer means arranged to limit the
9 travel of the lever by a variable amount according
10 to the relative position of the lever and the
11 variable spacer means.

12

13 2. Valve assembly according to claim 1 wherein the
14 valve is a tilt valve including a valve stem, and
15 the lever is coupled to the valve stem.

16

17 3. Valve assembly according to claim 1 or 2
18 wherein the variable spacer means is adapted to
19 prevent travel of the lever in a particular relative
20 position of the lever and the variable spacer means.

21

22 4. Valve assembly according to claim 1 further
23 including a nozzle, the lever being integral with
24 the nozzle.

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26 5. Valve assembly according to any preceding claim
27 wherein the variable spacer means includes a
28 plurality of spacer portions of differing thickness,
29 each spacer portion being arranged to limit the
30 travel of the lever by a predetermined amount.

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1 6. Valve assembly according to any of claims 1 to
2 4 wherein the variable spacer means comprises a cam
3 surface arranged to limit the travel of the lever by
4 an amount which varies with the relative position of
5 the lever and the variable spacer means.

6
7 7. Valve assembly according to claim 5 wherein the
8 variable spacer means comprises a collar which in
9 use engages with a container with which the valve
10 assembly is used.

11
12 8. Valve assembly according to claim 5 or 7
13 wherein the spacer portions comprise a plurality of
14 portions of the collar of different height adapted
15 to contact the lever when the lever is at the limit
16 of its travel.

17
18 9. Valve assembly according to claim 8 wherein the
19 lever is rotatably mounted relative to the valve so
20 that in use the lever is rotated to select a
21 required limit of travel of the lever and hence a
22 required flow setting of the valve.

23
24 10. Valve assembly according to claim 7 wherein the
25 collar is adapted to press fit on the rolled flange
26 of a standard pressurised container.

27
28 11. Valve assembly according to claim 5 wherein the
29 variable spacer means comprises a collar rotatably
30 mounted around the valve stem beneath the lever.

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1 12. Valve assembly according to claim 11 wherein
2 the spacer portions comprise a plurality of portions
3 of the collar of different thickness adapted to
4 space the lever from the container with which the
5 valve assembly is used when the lever is at the
6 limit of its travel.

7
8 13. Valve assembly according to claim 7 or 11
9 wherein the collar is in the form of a clip having a
10 radial slot.

11
12 14. Valve assembly according to claim 4 wherein the
13 nozzle serves as the lever.

14
15 15. Valve assembly according to claim 4 wherein the
16 lever is provided between the nozzle and the valve
17 stem and is substantially axially aligned with the
18 valve stem.

19
20 16. Valve assembly according to claim 14 or 15
21 wherein the variable spacer means is arranged to
22 limit the lateral travel of the nozzle or lever by a
23 variable amount according to the direction in which
24 the nozzle or lever is displaced.

25
26 17. Valve assembly according to claim 16 wherein
27 the spacer means comprises a collar which in use
28 engages with a container with which the valve
29 assembly is used.

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31 18. Valve assembly according to claim 17 wherein
32 the spacer portions comprise a plurality of recessed

1 portions of the collar of different depths adapted
2 to contact the nozzle or lever when the nozzle or
3 lever is displaced towards said recessed portion.
4

5 19. Valve assembly according to claim 17 wherein
6 the variable spacer means comprises a cam surface of
7 the collar adapted to contact the nozzle or lever
8 when the nozzle or lever is displaced laterally and
9 provide a limit of travel, the limit of travel
10 varying with the direction in which the nozzle or
11 lever is displaced.
12

13 20. Dispensing apparatus comprising a container and
14 a valve assembly according to any preceding claim.
15

16 21. Valve assembly according to claim 1 further
17 comprising an actuator which co-operates with a
18 bearing portion of the lever such that operation of
19 the lever from a primed position to a dispensing
20 position causes movement of the actuator to open the
21 valve;
22 wherein the variable spacer means comprises an
23 adjustable spacing means provided on the lever which
24 can be adjusted to limit the travel of the lever.
25

26 22. Valve assembly according to claim 21 wherein
27 the adjustable spacing means comprises an abutting
28 member which is movable to a selected one of a
29 plurality of positions.
30

31 23. Valve assembly according to claim 22 wherein
32 the abutting member is adapted to space the lever

1 from a container with which the valve assembly is
2 used at the limit of travel of the lever.

3

4 24. Valve assembly according to claim 22 or 23
5 wherein the abutting member is arranged such that
6 for each of the plurality of positions of the
7 abutting member there is a corresponding position of
8 the lever at the limit of travel of the lever.

9

10 25. Valve assembly according to any of claims 21 to
11 24 wherein the lever includes a handle which in use
12 extends along a portion of the side of a container
13 with which the valve assembly is used.

14

15 26. Valve assembly according to claim 25 wherein
16 the adjustable spacing means is provided at the
17 handle.

18

19 27. Valve assembly according to claim 25 or 26
20 wherein the lever is substantially L-shaped, the
21 bearing portion is provided on a first leg of the L-
22 shape and the handle is provided on the other,
23 second leg of the L-shape.

24

25 28. Dispensing apparatus comprising a container, a
26 nozzle and a valve assembly arranged between the
27 container and the nozzle, the valve assembly
28 comprising:

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a valve;

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a lever having a bearing portion; and

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an actuator which co-operates with the bearing

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portion of the lever such that operation of the

1 lever from a primed position to a dispensing
2 position causes movement of the actuator to open the
3 valve;

4 wherein the lever comprises an adjustable
5 spacing means which can be adjusted to limit the
6 travel of the lever.

7
8 29. Dispensing apparatus according to claim 28
9 wherein the adjustable spacing means comprises an
10 abutting member which is movable to a selected one
11 of a plurality of positions.

12
13 30. Dispensing apparatus according to claim 29
14 wherein the abutting member moves by sliding and is
15 adapted to engage resiliently in each of the
16 plurality of positions.